

ABSTRACT

A novel device structure and process are described for an SCR ESD protection device used with shallow trench isolation structures. The invention incorporates an SCR device with all SCR elements essentially contained within the same active area without STI elements
5 being interposed between the device anode and cathode elements. This enhances ESD performance by eliminating thermal degradation effects caused by interposing STI structures, and enhances the parasitic bipolar characteristics essential to ESD event turn on. Enabling this unique design is the use of an insulation oxide surface feature which prevents the formation of contact salicides in unwanted areas. This design is especially suited to silicon-on-insulator
10 design, as well as conventional SCR and LVTSCR designs.